



NOTES ENTEROCOCCUS

ENTEROCOCCUS

osms.it/enterococcus

PATHOLOGY & CAUSES

- Gram-positive spherical-shaped bacteria (cocci)
- Grow in pairs (diplococci)/short chains
- Non-spore forming
- **Optimal growing conditions:** 45°C/113°F, can withstand up to 60°C/140°F
 - Facultatively anaerobic bacteria
 - 6.5% NaCl, bile-containing media
- Characteristics
 - **Catalase negative**, pyrrolidonyl arylamidase (PYR) **positive**
 - **Variable hemolytic activity** on blood agar plates; most commonly gamma hemolytic
- Common human pathogens: *E. faecalis*, *E. faecium*
- Important **cause of hospital-acquired infections**, esp. infective endocarditis, urinary tract infections (UTIs), infections of prosthetic devices (e.g. venus/urinary catheters)
 - Surface carbohydrates → adherence to cardiac valves → fibrinogen synthesis → valve vegetations → infective endocarditis
 - Adherence to renal epithelial cells → UTI
- Less common associations
 - Wound, bloodstream, biliary tract, pelvic infections; intraabdominal abscesses

RISK FACTORS

- Indwelling medical devices (e.g. central venous, urinary catheterization)
- Cardiovascular abnormalities

- Prolonged hospitalization, mechanical ventilation
- Prior antibiotic use, immunodeficiency

COMPLICATIONS

- Bacteremia
 - Immunocompromised individuals

SIGNS & SYMPTOMS

- UTIs
 - Cystitis, pyelonephritis; dysuria, frequency, urgency, suprapubic/flank tenderness
- Infective **endocarditis**
 - **Subacute** onset of fever, malaise, peripheral signs (e.g. Janeway lesions, Osler's nodes), cardiac murmurs (usually left-sided), splenomegaly
- Infection of prosthetic devices, wounds
 - Erythema, swelling, tenderness, warmth

DIAGNOSIS

DIAGNOSTIC IMAGING

Transthoracic echocardiography; abdominal CT scan; ultrasound

- Identify organ involvement

LAB RESULTS

- Cultures from infected sites (e.g. blood, urine)
- Susceptibility testing
 - Detect antibiotic resistance

VISIT...

LANZAROTE
Caliente.COM

- Complete blood count (CBC)
 - ↑ polymorphonuclear cells
- Urinalysis
 - UTI → pyuria, proteinuria, hematuria

TREATMENT

MEDICATIONS

Antimicrobial therapy

- Localized infections
 - Ampicillin/beta lactamase inhibitors (clavulanate/sulbactam)
 - **Alternative:** nitrofurantoin
- Serious infections with bacteremia, meningitis, endocarditis
 - Penicillin/ampicillin + aminoglycoside
 - **Alternative:** vancomycin, aminoglycoside
- Vancomycin-resistant enterococcal (VRE) infection
 - Linezolid/daptomycin

SURGERY

- Drain abscess
- Valve replacement

OTHER INTERVENTIONS

- Remove venous/urinary catheters